

being dependent on a rejected base claim, but it was indicated that it would be allowable if in independent form, including all the limitations of the base claim and any intervening claim.

Accordingly, the subject matter of claim 10 has been rewritten as claim 21 to incorporating the subject matter of both claim 1 and claim 10. Accordingly, this should become allowable.

In an earlier conference with the Examiner, there was also a discussion as whether or not it would be appropriate for the applicant to overcome the rejection under the Eckloff patent by submitting an affidavit under Rule 37 CFR 1.131 (a), but it would be necessary to overcome the Eckloff reference only to an interference proceeding. This matter will be discussed later in these Remarks. However, it would be appropriate to make a few brief comments at this time.

In MPEP § 1,606 dealing with "Interference Between an Application and a Patent; Subject Matter of the Interference", we find the following language:

"Before an interference is declared between an application and an unexpired patent, the examiner must determine that there is interfering subject matter claimed in the application and the patent which is patentable to the applicant subject to a judgment in the interference."

At present, the only claim which was found allowable is claim 10 (which has been rewritten as newly submitted claim 21 to place it in condition for allowance), and it was therefore determined that claim 10 is patentable over and above the Eckloff et al. patent, regardless of whether the applicant is a first inventor or not. However, all of the rest of the claims, which could conceivably be the subject in an interference proceeding are under rejection. Accordingly, before the issue of requesting an interference between the present application and the Eckloff et al. patent can be considered, it is necessary to get over the first hurdle of overcoming the rejection on the basis of 35 USC 103 (a), based upon the four prior art references, which in the parent application were used in different combinations for making rejections, namely, the British reference 2,111,017; the Schaller patent (US 4,662,526); the Bean patent (US 1,083,182); and the Larsen

patent (US 3,885,607). After this is done, then there will be further discussion concerning whether a rule under 1.131 (a) would be appropriate.

To discuss now the rejection under 35 USC 103 on the basis of the four references noted above, there is submitted with this Amendment three Declarations, one by a Mr. Mecum, and two by Mr. Davis (one of the inventors in the present application). The first Declaration of Mr. Davis relates to the patentability of the present invention and will be designated on the first page as "declaration number 1 of Mr. Davis". The second declaration of Mr. Davis relates to the early reduction to practice of the present invention and is designated "Declaration 2 of Mr. Davis", and this will be discussed later in these remarks.

The Declaration of Mr. Mecum and Mr. Davis (i.e. the first declaration) give documentation to the long felt need for the present invention, the benefits obtained by the present in substantially alleviating the difficulties in removing manhole covers (also called "vault covers") and the like, and the success of the present invention in avoiding injury to the personnel who are engaged in the lifting and replacing of manholes.

With regard to the Declaration of Mr. Mecum, he has been working for Seattle City Light since 1972, and more specifically doing the underground work which relates to the removal of the manhole covers since 1981. In paragraph 5 of page 2 of his Declaration, Mr. Mecum indicates that to the best of his knowledge, the vault lids (manhole covers for electrical power distribution systems) have been in existence for about the past 90 years.

Also, in paragraph 6, Mr. Mecum states that other mechanical methods have been tried (to replace the generally used manual methods discussed previously), such as attaching a fulcrum or other member to the lid of the manhole cover, etc. However, to the best of his knowledge, the manual operation still remains the most commonly used method.

On page 3 of Mr. Mecum's Declaration, he refers to his letter of August 30, 1994, (attached to his Declaration) where he discusses his initial use of the present invention for testing an evaluation. In his letter he makes some suggestions to make it more user friendly. For example, he suggests that the tool should be in an easily available location, such as being mounted to the rear exterior of the truck. Mr. Mecum explains this further in paragraph 9, where he

states if there are inconveniences or time delays in trying to get the removal of equipment set up or if it is awkward to handle, the person on the crew is likely not going to take the trouble to use it but simply use it and go back to the tried and true method of using the commonly used prior art hook, even though it does put a strain on the person's back. He also states the following about the tool of the present invention:

"This tool can be set up very quickly and it is very simple to use. Further, there is the convenience that after the tool is used to move the vault lid off to the side, then the replacement becomes very easy since it's just the reverse operation of moving the tool about a pivot point back over the vault lid opening."

In Section 10 of Mr. Mecum's Declaration he indicates that while he doesn't have any hard statistics on back injuries due to the lifting of vault lids, he recognizes this as being a long standing problem.

With regard to Mr. Mecum's comments on whether this solution is "obvious", he indicates that he has been in this work since 1972 and he has long fully realized that the lifting of vault lids is a common cause of back injury. He points out that nothing has come along that seems to provide an answer that is practical, meaning that it would be sufficiently useful and user friendly and be acceptable in the day to day work routine. He also indicates that this tool seems to answer this problem in a practical way.

With regard to the first declaration of Mr. Davis, this presents his analysis of the back problems associated with removing vault lids, and the prior art manner of doing this, etc., I would first call attention to Mr. Davis's credentials to comment on the problem of back injuries, and also on the mechanics of vault lid lifting by the manual method, along with the problems relating to the same.

On page 2, in the last paragraph 5 of Mr. Davis's first Declaration and following on to the top of page 3, he indicates that the lifting forces that need to be exerted can exceed one thousand pounds from lifting from the center of the lid.

In Section 7 Mr. Davis's Declaration he analyzes the biomechanics of lifting vault covers in the common prior art way. He indicates that these demands often far exceed maximal permissible load limits and recommend load limits for backs. He also indicates that the possible unstable footing when lifting, pulling and dragging the vault lid creates a problem and increases the likelihood of injuries.

In Section 8, he indicates that in using the present invention, the lid is easily lifted off using the hand crank with about four to eleven pounds of hand arm force for up to a nine hundred pound lift. When the lifting is completed, the removal of the lid laterally can be performed from an upright position, and the only resistance is the resulting resistance of the wheels of the tool rolling over the surrounding surface.

As indicated above, the references upon which the rejection under 35 U.S.C. 103 were made are the following:

- a) U.K. Patent application GB 2,117,017A (Edwin Blunt), published on June 29, 1983;
- b) U.S. 1,083,182 (Bean) issued in 1913;
- c) U.S. 4,662,526 (Schaller);
- d) U.S. 3,885,688 (Larsen).

The British application will first be considered. Before discussing specifically this British patent publication, it is believed pertinent to call attention to one of the serious concerns expressed by Mr. Mecum in his Declaration. He expressed the necessity of having a tool that is practical to use, one that can be easily be put into place, and can easily accomplish the removal of the vault lid (manhole cover). He says otherwise when the workman is busy and trying to get the job done, he likely will not take the trouble to use the tool.

With that in mind, let us now review the mode of operation of the removal of the vault lid in accordance with this British patent publication.

This description begins on the second page, first column of the British patent application, beginning on line 55. For the convenience of the Examiner, the steps will be listed in sequence with numerical designations.

1. The device is first placed as shown in Fig. 1 of the application with the three blocks 36 being positioned near the edge of the cover but not overlapping.
2. The two "tools" 17 and 18 which engage the nuts 20 are fitted into the holes or sockets of the manhole cover.
3. Tension is taken up on the "tools" 17 and 18 by tightening the nuts 19 and 20.
4. The three jacking devices 21, 22, and 23 are screwed downwardly by their hexagonal head portions 25. To explain this further, the hexagonal portions 25 are not indicated as being hexagonal in Fig. 2, but they can be seen in Fig. 1. When these hexagonal head portions are rotated, this moves the member 24 downwardly so that its lower end 34 comes into engagement with its underlying block 36. Then the jacking devices 21, 22, and 23 are continued to be screwed down until even pressure is applied through the tools (i.e. the threaded member 17 and 18) to the manhole cover and through the jacks to the surrounding surface and frame.
5. The next step is to screw the bolts 27 downwardly, thus displacing the pistons 28 and 30 in each of the jacking devices 21, 22, and 23. (This is done, as can be seen in Fig. 2 by rotating the threaded member 27 downwardly, thus moving the smaller piston 28 downwardly in the bore 26. The fluid in the bore 26 in turn presses the piston head 30 downwardly and thus depresses the piston member 33 against the shoe, thus lifting the member 24 of the jacking devices 21, 22 and 23 upwardly, and then causing the threaded member 17 and 18 to lift the manhole cover upwardly.

Let us pause now and see what has been done so far. To get to this stage, both of the threaded connecting members 17 and 18 have to be moved downwardly into the openings and then come into engagement with the openings in the manhole cover. It appears from Fig. 2 that this is done by slipping the

expanded head portion of the connecting member into a fitted portion of the openings. Then the nuts 19 and 20 are rotated to snug these up.

Then there are two separate rotating operations accomplished on each of the three jack members 21, 22 and 23. First the members 24 are threaded downwardly into proper engagement and the pressure is equalized among the members. After this is accomplished then the upper nuts that attach to the smaller threaded member 27 are rotated to depress the cylinder 30.

Therefore, there are eight separate threading operations to be accomplished after putting the tool in place, and what's been accomplished? The lid 10 has now been lifted out of its covering position in the manhole opening (or vault opening, depending on the terminology used). So what happens next? How does someone move the manhole cover off to one side so that the person can move down into the manhole? Quite possibly the entire beam 14 with the manhole cover attached thereto is picked up at one end and moved off to the side. Presumably, this is done manually unless there is some other device which would be employed.

Now let us assume that the manhole cover has been set aside. How is it moved back over the opening and how is it lowered back into place? After the beam 14 is moved over to the proper location, then the vault lid is lowered by reversing the threading operations of the four of the three jack members 21, 22, and 23. This would first involve unscrewing the three smaller threaded members 27, then rotating the three larger members 24 of the three jack members 21, 22 and 23 which would drop the vault lid back in place. Then the two threaded connecting members 17 and 18 would have to have their nuts 19 and 20 rotated to allow these members 17 and 18 to be disengaged.

When one looks at the device in this British patent application and then again reviews Mr. Mecum's comments about the desirability of having the lifting device practical and user friendly, it would seem to the undersigned that we could come to the following conclusion. This device shown in the British patent application would likely be used only in those extreme situations where there is a vault lid that is extremely difficult to remove, and a system of plurality of separate jacks are used to provide the lifting force to raise the manhole cover out of its closing position.

Now let us review the steps in the present invention. The apparatus of the present invention is put into place, and there is first a single rotating motion by which the center lifting device moves the connection downwardly to make the connection with manhole cover. Then this lifting device is rotated upwardly to lift the manhole cover. In contrast to this, there are eight different rotating actions at least (and maybe ten, depending upon the initial connecting member 17 and 18) to be used to lift the vault lid with the apparatus of the British publication. Then there are the same number to lower the vault lid back to its closing position and to cause disengagement.

Now let's look at the reconstruction that would have to be made to the British apparatus to make it meet the limitations of the claim 1 of the present invention. First, the jack member 21 would be eliminated, and there would be substituted for it a pivot member about which the entire beam could move rotationally.

Second, the two jack devices 22 and 23 would be eliminated and in its place there would be the two mobile supports (i.e. the two wheels).

Third, the connecting members 17 and 18 would have to be arranged so that these are not just connecting members, but there must be a lifting member operating from the intermediate location on the beam to essentially lift the entire manhole cover.

At this point, it would be appropriate to review one of the basic rules of patent law with which the Examiner is quite familiar. This is that to reject the patent on the basis of a piece of prior art, there has to be some suggestion or teaching that would lead one to take the teachings of the prior art and somehow make the needed modifications to meet the claims which are being rejected on the basis of that prior art. This is stated in the vernacular as, "The teachings of the patent application itself cannot be used a road map by which items from the prior art is reconstructed to meet the claims".

With all due respect to the position taken in rejecting this application, it would take a very unusual and extraordinary leap of the imagination to examine the British patent application and somehow reconstruct this to meet the claims of the present invention.

Let us now consider the Bean patent. This patent issued some 86 years ago and it essentially shows in Figs. 1-6 a wheeled car jack. In Fig. 7 it shows where an attachment can be added to the top of the car jack so that it could lift another object, such as an engine.

In the last office action, section 8 in which the rejection of claims 1-4, 7-9 and 13 was made on the basis of the British reference in view of Bean there is the following language: "It would have been obvious to provide the wheels to the plate 36 in the British reference if desiring to transport the cover in view of the teaching in Bean. Note: Applicants claims do not preclude these second means from being wheels also."

It should be noted that claim 1 has been amended so that in paragraph A, sub paragraph ii, line 4, the term "stationary" has been inserted before "pivot location".

First, it should be noted that the Bean patent relates essentially to a vehicle jack for automobiles and the like. In Figure 7 it is shown how this jack could be adapted with a lifting device for various objects. With all due respect to the examiner's position, it is submitted that any and all lifting devices, simply because they are lifting devices, are not considered to be in analogous arts. Lifting devices are used in every conceivable location, such as construction sites, offshore oil platforms, manufacturing plants, grocery stores, etc. The art relating to automobile jacks is far removed from the problems of removing vault lids for utilities.

There is absolutely no suggestion in the British reference that one should go far afield into automobile jacks to find wheels and add these to the British reference. Alternatively, there is no suggestion in the Bean patent that this could be somehow adapted for use removing vault lids. In fact, the very construction of the Bean reference would make one wonder how it could be possibly used to lift a vault lid.

Even if one were to take the British patent and the Bean patent together and ask a person skilled in the art of removing and replacing vault covers to study these for a few hours and come up with a better vault cover manhole removal apparatus, it's not clear what a person might do. Quite possibly the person might simply use an adaptation in Fig. 7 of the Bean patent and beef up

with
figures

the rest of the apparatus so that there would be enough counter weight so that the torque imposed at the location of the front wheels would not lift the main rear wheels off the ground. Or one could maybe take a more imaginative approach and take the frame of Bean and instead of having a jack that goes up, have a lifting mechanism that has a hook on the bottom to make the two side wheels wide enough to fit on opposite sides of the manhole cover. But with all honesty, the undersigned can't see any reasonable way of combining these two references (the British publication and the Bean patent) to arrive at the present invention.

Further, if one were to somehow modify the Bean reference or even combine it in such a way so that it would have in this lifting operation a stationary pivot location, this would frustrate the very purpose of the Bean reference. In column one of Bean it is indicated that this vehicle jack is designed so that this vehicle could be moved while it is jacked up. Further, in being used as a hoist (figure 7 of Bean) the Bean apparatus is designed to be a wheeled carrying device which could move the load from one location to another. What could possibly be the purpose in having a fixed pivot location so that the item lifted could only be moved in a generally circular path around that pivot location? Further, if this were the arrangement of the apparatus of Bean used as a car jack, it would not be possible to simply move the hoisted part of the vehicle laterally. Rather it would have to go in a circular arc, requiring rear movement of the front wheels of the vehicle. This is totally antagonistic to the teaching of Bean.

Now we come to the Schaller patent (U.S. 4,662,526). This particular patent is directed toward the problems encountered in removing the cover of an electric arc furnace. In reading the section under "DESCRIPTION OF THE PRIOR ART" it points out that the gantry arm which extends over the furnace is exposed to a temperature of approximately 400°C which can cause deformation and damage to the hoist mechanism, particularly the joints.

The entire thrust of this patent is to alleviate this problem. In the first sentence under "Summary of the Invention" (column 1, beginning on line 46) the text reads as follows:

"The object of the present invention is, therefore, provision of a hoist mechanism for a cover for an electric arc furnace which is relatively immune to heat and the effects of electric current".

The Examiner is invited to read the rest of the "Summary of the Invention" of U.S. 4,662,526 which goes on through the rest of column 1 and to the top of column 2 where there is a system described where cooling fluid surrounds the pulling or hoisting rods and the hoisting pistons cylinder mechanisms. The gantry arms of the invention and transverse bars are provided with fluid type connections for a cooling fluid. Then in column 2, line 7 we find the following sentence "the protective pipes will thus operate at a temperature of the coolant and can be kept below a temperature of approximately 50°C without any difficulty. The fact that this temperature may be kept down to this degree is particularly important for the hydraulic hoisting mechanism."

It happens that this entire mechanism has a base 4 with a pivot location 20 and two wheels 21. The only attention that is given to this particular arrangement is a ten-word sentence that appears in column 2, beginning at line 66 as follows:

"The gantry 4 is rotatably arranged about support pin 20 on wheels 21".

By attempting to combine the British reference with the Bean reference and also with the Schaller reference, we have the highly improbable situation of somehow seeking out patents from three very different arts and somehow picking and choosing of certain parts to reconstruct the present invention.

These three references are from rather non-analogous arts. As indicated above, there is not a single industry or technology in the U.S. which does not require some kind of lifting apparatus. This goes for manufacturing operations, shipping industry, steel mill, the aircraft industry where loads are being lifted on and off planes, etc. Then hospitals, schools, the construction industry, etc. can be added to the list.

Possibly the only industry which may not be worried about lifting objects is for a space craft which is in the weightless environment of outer space, orbiting

the earth. In that environment one doesn't have to lift anything, but just mainly positioning it in one location or the other.

It cannot be said that anything and everything in any sort of application where lifting is involved is relevant prior art simply because it exerts a vertically upward force.

Accordingly, it is respectfully requested that the Examiner give consideration of the fact that as a practical matter if one is looking at the problem of lifting manhole covers, it is unlikely he would seek out devices relating to overcoming heat problems in operating around electric furnaces.

Finally, we come to the Larson reference. This relates to a device for laying flagstones. In the introduction to the Summary of the Invention on column 1, we find the following: "It is an object of the invention to provide a device whereby the laying of flagstones can be preformed more quickly and with less strain on the human body and whereby it would be unnecessary for the worker to pave (sic) to step outside the flagstones already laid." This reference was cited particularly with regard to Figure 9 to reject claim 6, stating that it would have been obvious to use the wheels at one end and a pivot at the other end of the beam structure, in the British reference in view of the wheels and pivot in Larson.

In Figure 9, the only item which could conceivably be the pivot would be the number 47 which actually comprises a pair of supporting legs that are spaced from one another. In Figure 9, there is shown a broken line position where the legs 47 are positioned on the ground and the hydraulic cylinder 33 is extended to raise the beam 27 to a higher location. The wheels 17 are arranged in such a way as to resist any lateral movement, as are the two legs 47 being spaced from one another. It cannot be seen how these could be considered a post for pivoting action.

To summarize the comments relative to these four prior references that were cited to reject the present application, the Declaration of Mr. Mecum clearly demonstrates the long felt need for a reliable way to remove the man hole covers that is "user friendly" and alleviates the stress on the person's back. The first Declaration of Mr. Davis clearly documents the benefits of the present invention. Further, the Declaration of Mr. Mecum clearly documents that the apparatus as

claimed on the present invention provides a convenience and "user friendly" mode of transportation.

It is elementary that patentability should be judged on the basis of whether or not it is "obvious of unordinary skill in the art." The present invention deals with a particular problem in the utilities industries, such as electrical utilities, sewers, etc. where there are manhole covers (also called vault covers). The problem of doing this in a convenient way to avoid back injury has been a problem for about ninety years (as stated in Mr. Mecum's Affidavit). Accordingly, reconsideration is requested of the rejection of the claims as presently submitted on the basis of the four prior references discussed above.

Earlier in these remarks, it was indicated that in the latter part of the remarks there would be a brief discussion of the Eckloff et al. reference. Also enclosed with this Amendment is a further Declaration of Mr. Davis (designated second Declaration of Mr. Davis) by which he documents that a fully functional prototype of the present invention had been constructed and tested at least as early as January 11, 1994, which is nine months prior to the filing date of the Eckloff et al. patent.

As indicated in the introductory portion of these remarks, it is somewhat premature to discuss in these remarks at any depth the issue of whether this should be resolved by an interference or not, since the only claim which has been indicated as allowable is claim 10, and this has already been decided being patentable over the Eckloff et al. reference. It would only be after one or more of the claims of the present invention would become allowable that consideration could be given to initiating an interfere.

Nevertheless, it is believed that it would be appropriate to at least briefly give this issue some consideration. The Applicants are not able to copy any claim of the Eckloff patent for the purposes of an interference. The parent claims (i.e. claims 1 and 4) of the Eckloff patent recite elements which are not even present in the specification and drawings of the present application. More specifically, there are two parent claims, and the last two paragraphs of claim 1 of the Eckloff patent read as follows:

"wherein said securing means comprises an elongated threaded member

extending vertically through an opening in said elongated member at a location between said first and second means and mounted on said elongated member for rotation into threaded coupling with a threaded opening of the cover to secure the cover therewith, the portion of said threaded member above the elongated member comprising a device adapted to be engaged by a tool for rotating the threaded member in first and second angular directions, and wherein said opening in said elongated member comprises a slot for longitudinally adjusting the position of the threaded member on said elongated member, a bearing means having a dimension greater than said slot coupled to said threaded member for reducing the turning forces needed to rotate the threaded member mounted on said elongated member and for distributing the weight of the cover to said elongated member when the cover is raised and supported by the threaded member.”

This language refers to the attaching elements shown in Fig. 6 of the Eckloff et al. patent where there is an elongate threaded member 52 that can be threaded into a coupling 66, and with the threaded opening 64 which is able to receive the threaded member 68. Further, there is recited the upper slot 51 for longitudinally adjusting the position of the threaded member 52 on the elongate member 20 and a bearing means, which is the thrust bearing 60 for reducing the turning forces needed.

It is abundantly evident that these elements recited in the last two paragraphs of claim 1 of Eckloff et al. are not present in any way in the specification and drawings of the present application. Thus the Applicants have no right to copy claim 1 of Eckloff et al. in the present application.

Next we turn our attention to the second independent claim, which is claim 4, and the last two paragraphs of that patent read as follows:

“an elongated member for supporting said securing means above the cover and being supported by and coupled to said first and second means so that the cover and said first means are moveable through

arcs about a vertical axis located outside the periphery of the manhole, means for maintaining the cover at the same angular position relative to the elongated member during the raising and horizontal moving of the cover and

wherein said last mention means includes a pair of rod members spaced from each other and coupled to said elongated member and extending below the bottom of the elongated member, a spring bias means biasing said rod member against the elongated member to extend below the bottom of the elongated member so that when raised the cover top engages the bottom of said rod members against the spring bias to prevent rotation of the cover relative to the elongated member."

This refers to the device shown in Fig. 7, designated generally by numeral 72, where there is a pair of rod members 74 which are coupled to the elongated member 20 and extend below the bottom of the elongated member 20. There is a spring bias means 80 biasing each rod member 74 against the elongated member 20 to extend below the bottom of the elongated member so that when raised, the cover top engages the bottom ends of the rod members 74 against the spring bias 80 to prevent rotation of the cover relative to the elongated member 20. Again, it is abundantly evident that it is impossible for the Applicants in the present invention to make any claim to the apparatus claimed in claim 4.

The Applicants are willing to concede that whether or not the Applicants can claim prior inventorship over the inventors of U.S. 5,674,045 (Mr. Eckloff and Mr. Pettesch), Mr. Eckloff and Mr. Pettesch are fully entitled to the patent protection which they have in U.S. 5,674,045. There is nothing in the present application which could suggest that these particular devices recited in claim 1 and claim 4 of Eckloff et al. would be obvious in view of the subject matter of the present application (assuming it were cited as prior art either by itself, or in combination with other patents. In short, the Applicants have no dispute with Mr. Eckloff or Mr. Pettesch and have no desire to enter into a contest with them to establish priority inventorship. This is the reasoning why the Applicants herein simply wish to establish inventorship prior to the filing date of the Eckloff et al.

patent, so that the [redacted] would not be a rejection under 102 [redacted] which reads as follows:

"(e) the invention was described in a patent granted on an Application or patent by another filed in the United States before the invention thereof by the Applicant for patent, or an international application by another who has fulfilled the requirements in paragraphs...etc."

It is further submitted by the enclosed Declarations and the accompanying documentation that the date of invention by the Applicants in the present invention were clearly established prior to the filing date of the Eckloff et al. patent.

In closing, it is respectfully requested that reconsideration be given to the rejection under 103(a) on the basis of the British reference and the other patents relied upon, and it be accepted that the claims as presently submitted are unobvious over these references, and that with the date of invention of the present invention is clearly established so that the Application is found allowable.

The cooperation of the Examiner in discussing these various issues is appreciated. If there is any matter which yet needs to be resolved and if consultation with the applicant's attorney, the undersigned herein would be of help, then such consultation or conference would be most welcome. The Applicants' attorney can be reached at the phone number noted below.

Signed at Bellingham, County of Whatcom, State of Washington this
15th day of November, 2000.

Respectfully submitted,

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